



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# Successful in High Schools

---

## Rietz, Crathorne and Taylor's School Algebra

By H. L. RIETZ, Professor of Mathematical Statistics, A. R. CRATHORNE, Associate in Mathematics, University of Illinois, and E. H. TAYLOR, Professor of Mathematics in the Eastern Illinois State Normal School. (*American Mathematical Series.*) *First Course.* xiii + 271 pp. \$1.00; *Second Course.* x + 235 pp. 75 cents; *Complete* in one volume unabridged, \$1.15.

FRED W. HUTCHINSON, *High School, Dover, New Hampshire*:

We find this text highly satisfactory.

BESSIE DEYOE, *High School, Hastings, Michigan*:

We have been using both the first and second courses. I have been especially pleased with the approach to the subjects in the first course, in the beginning of the book. The pages are attractive and the length of the exercises not tiresome.

E. B. LIST, *Streator Township High School, Illinois*:

The *Advanced Algebra*, used here for the first time, has proven satisfactory thus far—four weeks trial.

## Finney and Brown's Modern Business Arithmetic

By H. A. FINNEY, of the Walton School of Commerce, Chicago, and J. C. BROWN, Principal of the State Normal School, St. Cloud, Minn. *Brief Course*, 298 pp. 8vo. 85 cents. *Complete Course*, 488 pp. 8vo. \$1.10.

CAROLYN RODGERS, *John Wanamaker Commercial Institute, New York City*:

I find it a most comprehensive book and have asked that it be put into our school as our text. The authors are to be congratulated on the quality and arrangement of the subject-matter, and the publishers deserve much credit for the excellent style and type of the book.

FRANCIS L. BAIN, *Co-operative Industrial Course of the Dorchester High School, Boston, Mass.*:

I have been more than favorably impressed with the wide and practical variety of problems presented, not forgetting the graded exercises on quick calculation.

During sixteen years' teaching experience I have tried to emphasize the value of and necessity for a thorough knowledge of written and oral short methods as applied to industrial and business arithmetic, based upon business demands, and it is pleasing to find so much attention devoted to these features in this new publication.

B. FRANK BROWN, *Lake View High School, Chicago, Ill.*:

I have taken steps to have this book put on the list. It is just what we need.

---

## HENRY HOLT AND COMPANY

19 West 44th Street  
NEW YORK

6 Park Street  
BOSTON

2451 Prairie Ave.  
CHICAGO

# **UNIVERSITY OF WISCONSIN**

## **SUMMER SESSION, 1918**

**June 24 to August 2**

**230 Courses. 140 Instructors.** Graduate and undergraduate work leading to the bachelor's and higher degrees. **Letters and Science, Medicine, Engineering and Agriculture** (including **Home Economics**).

**Special War-time Courses**, both informational and for practical training.

**Teachers' Courses** in high-school subjects. Strong programs in all academic departments. Vocational training. Exceptional research facilities.

**Favorable Climate. Lakeside Advantages.**

One fee for all courses, \$15. For detailed announcements, address

**REGISTRAR, UNIVERSITY, Madison, Wisconsin**

*Published February 1918*

## **ANALYTIC GEOMETRY**

**By EDWIN S. CRAWLEY and HENRY B. EVANS**

**Professors of Mathematics in the University of Pennsylvania**

Size: xiv+239 pages,  $7\frac{1}{4} \times 4\frac{3}{4}$  inches. Price \$1.60.

Chapters I to X (190 pages) give a full college course in plane analytic geometry. Chapter XI (14 pages) on empirical equations will be of particular interest to students of engineering and other applied sciences. Chapter XII, the concluding chapter, is devoted to the extension of coordinate geometry to some space problems.

Orders and applications for sample copies for examination with a view to introduction should be addressed to

**E. S. CRAWLEY, University of Pennsylvania, Philadelphia**

## **Barker's Plane Trigonometry**

**With Tables**

By **EUGENE HENRY BARKER** (Los Angeles Polytechnic High School). 86 Illustrations. Cloth \$1.00 Postpaid.

"The book contains such a clear exposition that an instructor becomes almost superfluous. All examples and problems are strictly trigonometric and judiciously chosen."

*—From a teacher.*

## **Roray's Industrial Arithmetic**

By **NELSON L. RORAY** (Wm. L. Dickinson High School, Jersey City). 36 Illustrations. Cloth 75 cents Postpaid.

"I am impressed with the most excellent illustrations. These are, to my mind, of prime importance."—*From a teacher.*

## **Roray's Industrial Arithmetic for Girls**

Illustrated. Cloth 75 cents Postpaid.

"A book which covers the practical mathematical problems of every woman's life."

*—From a teacher.*

---

**P. BLAKISTON'S SON & CO., Publishers**

**1012 Walnut Street, Philadelphia**

# Publications of the American Mathematical Society

## TRANSACTIONS OF THE AMERICAN MATHEMATICAL SOCIETY.

The Transactions is devoted to research in pure and applied mathematics and is the official organ of the Society for the publication of important original papers. Published quarterly. Subscription price for the annual volume, \$5.00.

## BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY.

Devoted largely to critical reviews of mathematical books, the Bulletin also contains reports of the meetings of the Society and of other mathematical bodies, short original papers, reports on progress in the science, lists of new publications, and notes on current events in the mathematical world. Published monthly, except August and September. Subscription price for the annual volume, \$5.00.

THE EVANSTON COLLOQUIUM LECTURES. Delivered at the Chicago Congress of Mathematics, 1893, by FELIX KLEIN. Republished by the Society, 1911. Price, 75 cents.

THE BOSTON COLLOQUIUM LECTURES. Delivered before the Society, Boston, 1903, by H. S. WHITE, F. S. WOODS, and E. B. VAN VLECK. Price, \$2.00.

THE NEW HAVEN MATHEMATICAL COLLOQUIUM, 1906. By E. H. MOORE, E. J. WILCZYNSKI, and MAX MASON. \$3.00.

THE PRINCETON COLLOQUIUM LECTURES. 1909. By G. A. BLISS and EDWARD KASNER. \$1.50.

THE MADISON COLLOQUIUM LECTURES. 1913. By L. E. DICKSON and W. F. OSGOOD. \$2.00.

Circulars sent on request. Address all orders to

**American Mathematical Society**  
501 West 116th Street New York City

The American Mathematical Society was organized in 1894 and includes among its 730 members nearly all the mathematicians of the United States. The annual dues are \$5.00; admission fee, \$5.00. Members receive the Bulletin without further charge, and are entitled to a reduced price on the other publications of the Society. Meetings are held ten times a year in New York, Chicago, and other cities. The Society has a library of over 5000 volumes.

# The American Mathematical Monthly

OFFICIAL ORGAN OF

## The Mathematical Association of America

Is the Only Journal of Collegiate Grade in  
The Mathematical Field in this Country

*This means that its mathematical contributions can be read and understood by those who have not specialized in mathematics beyond the Calculus.*

The Historical Papers, which are numerous and of high grade, are based upon original research.

The Questions and Discussions, which are timely and interesting, cover a wide variety of topics.

The Book Reviews embrace the entire field of collegiate and secondary mathematics.

The Curriculum Content in the collegiate field is carefully considered. Good papers in this line have appeared and are now in type awaiting their turn.

The Notes and News cover a wide range of interest and information both in this country and in foreign countries.

The Problems and Solutions hold the attention and activity of a large number of persons who are lovers of mathematics for its own sake.

There are other journals suited to the Secondary field, and there are still others of technical scientific character in the University field: but the MONTHLY is the only journal of Collegiate grade in America suited to the needs of the non-specialist in mathematics.

THE MATHEMATICAL ASSOCIATION OF AMERICA now has over eleven hundred individual members and over seventy-five institutional members. There are already nine sections formed, representing twelve different states. The Association has held so far two national meetings per year, one in September and one in December. The sections, for the most part, hold two meetings each year. All meetings, both national and sectional, are reported in the Official Journal, and many of the papers presented at these meetings are published in full.

*The slogan of the Association is to include in its membership every teacher of collegiate mathematics in America and to make such membership worth while. Application blanks for membership may be obtained from the Secretary, W. D. Cairns, 27 King Street, Oberlin, Ohio.*

# **THE NEW ERA PRINTING COMPANY**

**LANCASTER, PA.**

Is prepared to execute in first-class and satisfactory manner all kinds of printing and electrotyping. Particular attention given to the work of Schools, Colleges, Universities, and Public Institutions.

## **Books, Periodicals**

### **Technical and Scientific Publications**

#### **Monographs, Theses, Catalogues**

#### **Announcements, Reports, etc.**

#### **All Kinds of Commercial Work**

*(Printers of the Bulletin and Transactions of the American Mathematical Society, etc., etc.)*

Publishers will find our product ranking with the best in workmanship and material, at satisfactory prices. Our Imprint may be found on a number of high-class Technical and Scientific Books and Periodicals. Correspondence solicited. Estimates furnished.

**THE NEW ERA PRINTING COMPANY**

# THE MULTIPLEX WRITING MACHINE

## Special Mathematical Model

Two complete sets on one machine,—of any Science or Language, or many correspondence faces. All printable on one machine. "Many typewriters in one." "Just Turn the Knob."

### Sample Problem

To solve  $\frac{\partial^2 \varphi}{\partial t^2} = \sqrt{1+(\Delta h)^2} \frac{\partial^2 \varphi}{\partial x^2}$ , put  $m^2 = \sqrt{1+(\Delta h)^2}$  and assume  $\varphi = \tau(t) \cdot \xi(x)$ ; so that

$$\frac{\partial^2 \varphi}{\partial t^2} = \frac{d^2 \tau}{dt^2} \cdot \xi(x), \text{ and } \frac{\partial^2 \varphi}{\partial x^2} = \tau(t) \frac{d^2 \xi}{dx^2}. \quad \text{Sub-}$$

stituting these into the original equation, we find that the variables,  $t$  and  $x$ , can be separated by dividing through by  $\tau \cdot \xi$  where-

$$\text{upon we have } \frac{d^2 \tau}{dt^2} \div \tau = m^2 \frac{d^2 \xi}{dx^2} \div \xi. \quad \text{Since the}$$

first of these two equal members cannot vary when  $t$  changes nor the second when  $x$  changes, both must remain equal to some constant, say,

$-m^2 n^2$ . The two resulting equations yield the solutions

$$\xi = K_1 \cdot \sin[nx + \beta_1], \quad \tau = K_2 \cdot \sin[mnt + \beta_2]$$

$$\text{whence } \varphi = K_1 K_2 \sin[nx + \beta_1] \sin[mnt + \beta_2]$$

which we may then reduce to a more useful form:

$$\varphi = \sum_{n=0}^{n=\infty} A_n \sin[n(x \pm mt) + \delta_n].$$

An interesting fallacy results from applying the method of integration by parts,  $\int u \cdot dv = uv - \int v \cdot du$ , to a case where  $u = 1/x$  and  $dv = dx$ : we get

$$\begin{aligned} \int \frac{dx}{x} &= \frac{1}{x} \cdot \int dx - \int x \cdot [-1/x^2] \\ &= 1 + \int dx/x \quad \text{whence } 0=1 !! \end{aligned}$$

$$\int \frac{dx}{5+7x^2} = 1/5 \int \frac{dx}{1+\frac{7}{5}x^2} = \frac{1}{5} \sqrt{\frac{5}{7}} \int \frac{\sqrt{\frac{7}{5}} dx}{1+[\frac{7}{5}x]^2}$$

$$= \frac{1}{35} \arctan [\sqrt{7/5} x].$$

## THE HAMMOND TYPEWRITER COMPANY

Actual Facsimile by Prof. Ransom of Tufts College. Special Booklet on Application.

604 East 69th St., New York City, N. Y.